Article 6. Private Sewer Systems

4-601 CONNECTIONS; COMPLIANCE WITH PLUMBING CODE. Every building where persons reside, congregate, or are employed which abuts a street or alley in which there is a public sanitary sewer, or which is within two hundred feet (200') of a public sanitary sewer, shall be connected to the sewer, by the owner or agent of the premises, in the most direct manner possible, and with a separate connection for each home or building, and installed within 12 months after sewers are available to the premises. Each connection and each fixture emptying through the connection shall be installed in the manner prescribed by the Plumbing Code of the City. (Ord. 1466, Sec. 1)

4-602 REQUIREMENTS WHEN NOT CONNECTED TO PUBLIC SEWER SYSTEM. Every residence, place of business, or other building or place where persons congregate, reside, or are employed, and which does not abut a street or alley in which there is a public sanitary sewer, or which is not within two hundred feet (200') of a public sanitary sewer, shall be provided with a private water-flush toilet by the owner or agent of the premises, said water-flush system, to be built or rebuilt, constructed, and maintained in such manner as to meet the requirements of construction and maintenance hereinafter described. (Ord. 1466, Sec. 1)

4-603 DEFINITIONS.

603.1 ABSORPTION TRENCHES: One or more trenches of varying length and depth and of fixed horizontal separation in which effluent is percolated into the soil.

603.2 APPLICANT: Any person who submits an application for a permit for installation of a private sewage disposal system.

603.3 BEDROCK: Consolidated rock formation of impervious material which may exhibit a jointed, fractured, or cohesive structure.

603.4 DISTRIBUTION BOX: A watertight chamber below the outlet level of a septic tank or treatment unit and from which effluent enters the absorption system.

603.5 EFFLUENT: The liquid waste discharged from a private sewage disposal system.

603.6 EXPIRATION: A private sewage disposal system installation permit issued shall be valid for one (1) year from the month of issuance. If it has not been used in that time period it will become invalid and a new application procedure will take place. Fee is not refundable.

603.7 GROUND WATER TABLE: The upper surface of ground water in the zone of saturation of geologic formation.

603.8 HOLDING TANK: A watertight receptacle for the retention of sewage either before, during or after treatment.

603.9 INSTALLATION CONTRACTOR: Any person involved in the construction, installation or repair of private sewage disposal systems.

603.10 LOT SIZE: A site must contain at least 43,650 square feet (one acre) of land; and, a minimum of 10,000 square feet of suitable land available for sewage disposal.

603.11 PERMIT FEE: The fee for a private sewage disposal system permit is established by the Governing Body of the City of Gardner, Kansas, to cover administration, personnel and expense of field inspections. The fee is payable to the City of Gardner at the time the permit is issued. The fee is One hundred dollars ($100.00).

603.12 PERCOLATION TEST: A soil test at the depth of a proposed absorption system of a private sewage disposal system to determine the water absorption capability of the soil. The results of the test are normally expressed as the rate at which one (1) inch of water is absorbed.

603.13 PRIVATE SEWAGE DISPOSAL SYSTEM: Any soil absorption system used for the collection and disposal of domestic sewage from an individual establishment.

603.14 SEPTIC TANK: A watertight, accessible, covered receptacle designed and constructed to receive sewage. Two processes take place in the tank; settling of the solids, and the digestion of some of the accumulated solids by an aerobic action.

603.15 TRUNK LINE: The solid pipe, on undisturbed soil, from which the laterals extend.

603.16 VARIANCE: The Governing Body of the City of Gardner, Kansas, may grant a variance from the requirements of lot size, where a person shows, that because of practical difficulties or other special conditions, the strict application will cause unusual and unnecessary hardship. However, no variance shall be granted that will defeat the spirit and general intent of said requirements. (Ord. 1466, Sec. 1)

4-604 HOW TO APPLY.

604.1 To obtain a private sewage disposal system installation permit, the applicant shall first file an application in writing on a form furnished for that purpose. Every application shall be accompanied by:

A. A site address.

B. A test sheet including:

1. Soil-subsoil exploration.
2. Bedrock.
3. Ground water.
4. Percolation test.

5. Sewer system proposed.
6. Certification that owner would abandon septic installation and make connection to the City's sanitary sewer collection system within 12 months after said sewers are available to premises.

C. Two (2) plot plans including:

1. Boundary lines.
2. Setbacks.
3. Any existing buildings.
4. Any proposed buildings.
5. Any existing or proposed water lines.
6. Designated 10,000 square feet of usable area for laterals.
   a. A minimum of one (1) soil test hole marked.
   b. A minimum of three (3) percolation test holes marked.

604.2 There will be a twenty-four (24) hour waiting period before permits are issued.

A. Soil test hole and percolation test holes shall be left open until permit is issued for verification by the inspector.
B. The site address must be posted and visible from road.
C. The permit fee shall be established by the Governing Body of the City of Gardner payable to the City Clerk of the City of Gardner, Kansas upon issuance of the permit.
D. The permit shall be valid for one (1) year from month of issuance. (Ord. 1466, Sec. 1)

4-605 INSPECTION PROCEDURE.

605.1 The four (4) hour minimum notice to the City Hall personnel is required for a septic system inspection.

605.2 The site address must be posted and visible from the road.

605.3 There will be at least three (3) inspections required for each septic system.

A. The first site inspection is made after an application is submitted to verify:

1. That a minimum of three (3) percolation test holes were dug.
2. That a subsoil exploration hole was dug and the information submitted on the application was correct.
3. That there is 10,000 square feet of designated usable area for the lateral.

B. The second inspection is made when the system is installed. The tank and pipe shall be in the ground but must be uncovered for the inspector to check the following:

1. Tank size and structure.
2. Pipe from house to tank must be a minimum pipe schedule as spelled out in the adopted plumbing code.
3. Depth of gravel in laterals.
4. Level of pipes.
5. Trunk line on undisturbed soil.
6. Depth of fill over lateral.

C. The final inspection is made after final grade and before occupancy. This is to insure that the contour is maintained to divert water around lateral field and the depth of the laterals is maintained.

605.4 The City retains the right to periodically inspect all systems to assure they are functioning properly. (Ord. 1466, Sec. 1)

4-606 SOIL EXPLORATION PROCEDURE.

606.1 Subsurface explorations are necessary to determine subsurface formations and to determine the suitability of soil for a private sewage disposal system.

A. The type and depth of various soil layers up to six (6) feet.

B. The depth to the ground water table, if encountered.

C. The depth to the bedrock, if encountered. If the subsoil surface appears suitable, percolation tests should be made for each individual lot at points selected as typical of the area in which disposal field will be located, and at the elevation of the bottom of the proposed absorption trench.

606.2 Suitability of Soil. The first procedure in the design of subsurface sewage disposal systems is to determine the suitability of the soil for the absorption of effluent and the leaching area required. The soil must have an acceptable percolation rate without interference from ground water or bedrock below the level of the absorption system. In general, the following conditions shall be met:

A. There shall be a maximum of three (3) foot of coverage over lateral lines.

B. The average percolation rate shall be sixty (60) minutes or less per inch.

C. The maximum elevation of the ground water table shall be at least four (4) feet below the bottom of the absorption trench.

D. Bedrock shall be at a depth greater than four (4) feet below the bottom of the absorption trench.

E. The natural slope of the land shall be less than ten (10) percent. Unless these conditions are satisfied, the site is unsuitable for a subsurface sewage disposal system.

606.3 The City of Gardner may also decline issuance of the permit based on any severe limitations relating to any of the following factors:

A. Depth of ground water.
B. Geology.
C. Proximity to water supplies.
D. Slope of natural and finished grade.
E. Percolation test done by anyone other than a professional engineer. (1466, Sec. 1)

4-607 PERCOLATION TEST PROCEDURE.

607.1 The test must be performed according to the following procedure:

A. A minimum of three (3) holes must be dug in the area where the lateral field is proposed. The holes must be at least twenty-five (25) feet apart, be four to six (4-6) inches in diameter, and dug to a depth of the proposed lateral system (ideally about 24").

B. The sides of the holes should be roughed-up with a nail or other object to remove any polished soil surfaces and to allow a natural soil area for percolation. Remove all loose dirt and other material, and make the bottom as level as possible. About 2" of washed gravel should be placed in the bottom of the hole.

C. Twenty-four (24) hours before the test is to be run, the holes should be filled with clear water and kept full of water to swell and saturate the surrounding soil area. Determine the percolation rate twenty-four (24) hours after the water is first added to the hole. The purpose of this is to duplicate the most extreme condition under which the system is to function. Also, if this procedure is followed properly, the test will give comparable results in wet or dry seasons.

D. After the soil has been kept saturated, add enough water to attain a depth of ten (10) inches, take an initial depth reading and from a fixed point, take similar reading each hour for six (6) hours. The drop in water level is used to figure the percolation rate.

E. If the holes have been property saturated and all the water drains out before the end of the six (6) hour period, the test may be considered complete.

607.2 Absorption area shall be calculated based on the following tables:

Table 1: Required Absorption Area (square feet)

Percolation Rates	For Tank Size	Gallons

Minutes	1000 - 1200	1500
30	1100 - 1200	1300
40	1100 - 1200	1400
50	1200 - 1300	1600
60	1300 - 1500	1800

The acceptable lateral trench width shall be from 18" to 36" with the following minimum distances between trenches observed:

Table 2: Distances Between Trenches

Trench Width	Minimum Distances Between Center Line of Trenches
18 inches	7.0 feet
19-24 inches	8.0 feet
25-29 inches	9.0 feet
30-36 inches	10.0 feet

Square footage of trenches wider than 36" will be figured on the basis of 36" width. An approved standard trench pipe (10' length of rigid PVC) shall be used. The end of each lateral shall be capped or plugged. A minimum of 4" slope from outlet end of tank to first lateral. Individual trenches shall have a maximum slope of 4" per 100 feet. Individual trenches shall have a maximum of 100 feet from end of lateral to trunk line. Drainage lines shall be installed on top of at least 6" of washed gravel sized from 1" to 2". Untreated building paper or straw, or hay shall be placed over the gravel before backfilling. Serial or "step-down" distribution is required for excessively sloping yards. Depth of the trenches should be calculated to be approximately 24". (At least 12" of backfill dirt, 2" of gravel, 4" to 6" trench pipe, 6" of gravel. Total about 24".)

607.3 The system shall be designed to consist of a building connection, treatment unit such as a septic tank, and disposal field. The system shall receive all domestic sewage including laundry waste. Use of a distribution box is optional. The design of the system shall ensure that the wastes discharged to the private sewage disposal systems:

A. Do not contaminate any drinking water supply.

B. Are not accessible to insects, rodents or other possible carriers of disease which may come in contact with food or drinking water.

C. Do not contaminate the waters of any bathing beach or streams used as a water supply or for recreational purposes.

D. Are not a health hazard by being accessible to children.

E. Do not give rise to a nuisance due to odor or unsightly appearance.

F. Will not violate any other laws or regulations governing water pollution or sewage disposal.

607.4 No part of the lateral field shall be covered by more than three (3) feet of backfill or structures or paved areas which will adversely affect the function of the lateral field. All roof, areaway or foundation drains shall be excluded from the septic tank. (Ord. 1466, Sec. 1)

4-608 CONSTRUCTION SPECIFICATION AND MATERIALS FOR SEPTIC TANK SYSTEMS.

608.1 Tank Requirements:

A. Multiple compartments: In a tank of more than one compartment, the inlet compartment shall have a capacity of not less than two-thirds of the total capacity.

B. Construction: Plans for all septic tanks shall be submitted to the City of Gardner for approval. Such plans shall show all dimensions, reinforcing, structural calculations and such other pertinent data as may be required. Septic tanks shall be constructed of sound durable materials not subject to excessive corrosion or decay and shall be watertight. Each such tank shall be structurally designed to withstand all anticipated earth or other loads and shall be installed level and on a solid bed.

C. Depth: The top of the septic tank shall be brought to within 36" of the finished grade. Where a greater depth is permitted by the building official, the access manhole must be extended to the finished grade and the manhole shall have a concrete marker at grade.

D. Limitation: No septic tank shall serve more than one residence unless authorized by the building official.

E. Effluent: The effluent from all septic tanks shall be disposed of underground by subsurface irrigation.

608.2 The location of the septic system shall be such as to provide not less than the stated distance as shown in Table 3:

Table 3: Required Distances from the System

	Septic Tank	Lateral Field
Property line	10 feet	10 feet
Well or Pond	50 feet	50 feet
Water Line	25 feet	25 feet
Building	5 feet	25 feet

608.3 The liquid capacity of the septic tank serving a dwelling shall be based primarily on the number of bedrooms in the dwelling served and shall conform to capacities given in Table 4, which follows:

Table 4: Septic Tank Size Requirements

No. of Bedrooms	1 2 or 3	4 or 5
Capacity (gallons)	1000	1200	1500

Dwellings with more than five (5) bedrooms will be sized on an individual basis.

608.4 The liquid capacity of a septic tank serving a church, school, commercial establishment, or industry shall contain no influent other than that which would come from a residential dwelling. Plans for this type installation must be submitted to the City of Gardner for approval by the Engineer or Architect for the proposed building along with design capacities. (Ord. 1466, Sec. 1)

4-609 HOLDING TANKS. If lot fails to meet criteria for septic tank installation, applicant may apply for a temporary permit for a holding tank to be installed and to be used only until connection can be made to City's sanitary sewer collection system. (Ord. 1466, Sec. 1)

4-610 OTHER TREATMENT FACILITIES.

610.1 Other types of primary sanitary sewage treatment installations may be considered on an individual case basis.

610.2 These types of installations would be subject to review and approval by the City Engineer and the Kansas State Department of Health and Environment. (Ord. 1466, Sec. 1)